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306

LAZUK, A.D.

14

Comparative values of antilarval methods. A. D. Lazuk. Med. Parasitol. Parasitic Diseases 42, 1966, 9, No. 1-2, 25. U. S. Pub. Health Eng. Abstracts 12, No. 15, Mar., 1942. - Airplane dusting is impracticable in the control of anopheline larvae in low-lying densely populated areas near large rivers, but is very effective on large peat bogs and isolated water areas. Best results were obtained in destroying mosquitoes in their larval stage by spraying with an emulsion of 1 gal. of kerosene and about 2 lb. of soft soap in 10 gal. of water. C. R. Fisher.

LAZUK, A.D.

Phenology of *Anopheles maculipennis* in the northern part of
Moscow Province; results of observations of the Dmitrov
Malaria Station for a 10-year period. Med.paraz. i paraz. bol.
24 no.2:160 Ap-Je '55. (MLRA 8:10)

(MOSQUITOES,

Anopheles maculipennis, distribution in Russia)

LAZUK, A.D.

Periodic fluctuation in the water level of reservoirs as means for exterminating Anopheles larvae. Med. araz. i paraz.bol.su polement to no.1:18-19 '57. (MIRA 11:1)

1. Iz Dmitrovskoy protivomalyariynoy stantsii Moskovskoy oblasti.
(MCSQUITOES--EXTERMINATION) (RESERVOIRS)

LAZUK, A.D.

The main biotopes and the seasonal variations in the number of ticks
in the northern part of Moscow Province [with summary in English].
Med.paraz. i paraz.hol. 27 no.1:41-47 Ja-F '58. (MIRA 11:4)

1. Iz parazitologicheskogo otdeleniya Dmitrovskoy sanitarno-epidemi-
ologicheskoy stantsii.

(TICKS.

distribution, habitats & seasonal variations in northern
Moscow area (Rus))

LAZUKIN, N.: USKOV, I.

We have it in the Moscow coal basin. Sov.shakht. 11 no.4:27-29
Ap '62. (MIRA 15:3)
(Moscow Basin--Coal mines and mining) (Automatic control)

LAZUKIN, V. N.

LAZUKIN, V. N. - "Investigation of Ferromagnetic Resonance in Centimeter Waves."
Sub 18 Jun 52, Moscow Order of Lenin State U imeni M. V. Lomonosov. (Dis-
sertation for the Degree of Candidate in Physicemathematical Sciences).

SO: Vechernaya Moskva January-December 1952

PA 241T94

LAZUKIN, V. N.

USSR/Physics - Ferromagnetic Resonance Jul/Aug 52

"Ferromagnetic Resonance in Centimeter Waves," V. N. Lazukin, Sci-Res Inst of Phys, Moscow State U

"Iz Ak Nauk, Ser Fiz" Vol 16, No 4, pp 510-520

Describes method for measuring the hf magnetic permeability of metallic ferromagnetics and results of measurement of resonance in several samples. Explains the reasons for the difference in width of the resonance curves. Indebted to Ye. I. Kondorskiy.

241T94

LAZUKIN, V. N.

USSR.

✓ Study of the losses in cells resonance absorption at ultra-high frequencies by means of a wave guide. V. N. Laputin, Uchenye Zapiski, Moscow, Gosudarst. Univ. (ser. fiz.-mat. nauki) No. 162, Seriya No. 6, 193-74 (1953); U.S.S.R. Acad. Sci. Div. Phys. Math. Sci. Engl. transl. Ser. A, 47, 416-2. The permeability μ , and the dielec. const. ϵ , in high-frequency fields were determined by comparing the resistance of an empty wave guide with that of the wave guide partially filled with a ferromagnetic material. The measurements were made at a frequency of 3.44×10^9 cycles/sec. The samples were electrolytic Ni, 45% Permalloy, and Mo Permalloy. The difference in the absorption values is ascribed to the difference in the elec. cond. of the metals.

J. Rovtars Leach

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Smear
224

Lazukin, V. N.

USSR/ Physics - Conferences

Card 1/1 Pub. 124 - 20/39

Authors : Lazukin, V. N., Cand. of Phys-Math. Sc.

Title : The 50-th anniversary of the theory of relativity

Periodical : Vest. AN SSSR 26/2, 106-110, Feb 1956

Abstract : Minutes are presented from the special session of the Physico-Mathematical Sciences Department of the Academy of Sciences, USSR honoring the 50-th anniversary of the September day in 1905, when the German language journal, "Annalen der Physik," published the Albert Einstein report entitled, "The Electrodynamics of Moving Media." In this report the famous scientists for the first time formulated the basic concepts of his special theory of relativity.

Institution :

Submitted :

LAZUKIN, V.N.

CARD 1 / 2

PA - 1485

SUBJECT USSR / PHYSICS

AUTHOR LAZUKIN, V.N.

TITLE

PERIODICAL

A Possible Application of Cyclotron Resonance in Mass Spectrometry.
 Zhurn.eksp.i teor.fiz, 31, fasc.2, 339-340 (1956)
 Issued: 10 / 1956 reviewed: 11 / 1956

Cyclotron resonance may, in gas analysis, be employed for the investigation of plasma properties (e.g. when measuring the mobility of ions and the duration of collisions), and in mass spectroscopy. The principle of such a mass spectrometer is similar to the radar frequency mass spectrometer as suggested by J.A.HIPPLE et al, Phys.Rev. 76, 1877 (1949); 80, 487 (1951) and is based on measuring the resonance frequencies of cyclotron absorption for ions of different masses and on the computation of m by means of the formula $\gamma = eH/2\pi mc$. The block scheme of the measuring device is shown by a drawing. An ion bundle of low energy is emitted by a source into a condenser which is part of the oscillatory circuit of a high frequency generator. Under the influence exercised by the magnetic field \vec{H} , which is parallel to the condenser plates, the ions move along spiral lines the projections of which on to a surface that is vertical to \vec{H} are circles with the radius $\rho = mcv_1 / eH$. (v_1 - projection of the velocity of the ion on to this surface). If the electron performs at least one revolution in the condenser, a high frequency output (?) is absorbed in the case of the aforementioned frequency $\gamma = eH/2\pi mc$. If the field strength or frequency are modulated with sufficient depth, the curve of the resonance frequency

Žurn.eksp.i teor.fis,31, fasc.2, 339-340 (1956) CARD 2 / 2 PA - 1485

quency may be displayed in the usual manner on the screen of an oscillograph or recorded by means of an automatic recording instrument.

The sensitivity of the apparatus increases with an increase of the ion current and with a decrease of the energy of the ions. This sensitivity can be increased to such an extent that it is possible to observe ions contained in natural mixtures of elements in concentrations of the order 10^{-7} .

The dispersion of the device is linear and is defined by the relation $D = (eH/2\pi mc)(1/100 \text{ m})$ per 1% of the relative mass difference. For the elements in the middle of the periodic system D is of the order of 10^4 c .

The resolving power is $R = m/\Delta m = v/\Delta v$, where Δv is the error committed on the occasion of measuring frequency. In view of the easily attainable measuring accuracy of 10^{-5} it may be hoped that the construction of a device with a resolving power of 10^5 and more will become possible.

Thus, investigations carried out with respect to cyclotron resonance for ion bundles may prove useful for the measuring of the masses of isotopes. Such investigations are to be realized with the greatest ease in the case of light nuclei.

INSTITUTION: Moscow State University.

LAZUKIN, V.N.

CARD 1 / 2

PA - 1452

SUBJECT USSR / PHYSICS
 AUTHOR LAZUKIN, V.N.
 TITLE Cyclotron Resonance.
 PERIODICAL Usp.fis.nauk, 59, fasc.3, 553-582 (1956)
 Issued: 9 / 1956 reviewed: 11 / 1956

The basic rules of cyclotron resonance can be explained in the classical manner.
 The present survey is arranged as follows:

Cyclotron resonance in an electron gas: An electron gas in a magnetic field, the absorption of high frequency energies as a result of dipole interaction, absorption as a result of quadrupole interaction, the width of the absorption lines, cyclotron resonance in metals.

Cyclotron resonance in semiconductors: The effective mass and the surface energy of semiconductor crystals, the classical theory for the case of the isotropic mass of the carrier, the influence exercised by the polarization of the sample, the theory of cyclotron resonance in the conductivity zone of Ge and Si (resonance of the n-type), cyclotron resonance in the valence zone of Ge and Si (resonance of the p-type).

Experimental results: Experimental methods, resonance in Ge and Si of the n- and p-types.

Conclusions: As the aforementioned results show the examination of cyclotron resonance in semiconductors is useful for the development of the theory of these semiconductors. Further investigations in this direction concerning other materials of the semiconductor group will, without doubt, furnish further results.

PA - 1452

Usp.fis.nauk, 59, fasc.3, 553-582 (1956) CARD 2 / 2

It is, in principle, possible, that cyclotron absorption is observed on the plasma of a gas discharge and on ion bundles. Investigations in this direction may furnish useful data concerning the composition and the properties of the plasma.

Such experiments are, without doubt, bound to meet with a number of methodical difficulties connected with the dielectric- and oscillation properties of the plasma as well as with the production of intense bundles of low energy. Should these difficulties be overcome, it will be possible to make use of the here discussed effect for the analysis of gases as well as for the mass spectroscopy of atomic nuclei.

INSTITUTION:

LAZUKIN, V.N.

ENDRYU, E. [Andrew, M.R.]; POMERANTSEV, N.M., [translator]; SKUBUR,
Ye. N., [translator]; LAZUKIN, V.N., red.; TELESNIN, N.L., red.
SOKOLOVA, T., tekhn. red.

[Nuclear magnetic resonance] IAdernyi magnitnyi rezonans. Moskva,
Izd-vo inostr. lit-ry, 1957. 299 p. [Translated from the English].
(MIRA 11:11)

(Nuclear moments)
(Magnetism)

LAZURIN, V. N.

3426

A POSSIBLE APPLICATION OF CYCLOTRON RESONANCE
TO MASS SPECTROMETRY. V. N. Lazurin (Moscow State
Univ.). Soviet Phys. JETP 4, 266-7 (1957) March.

The principle of operation of a possible mass spectrom-
eter utilizing cyclotron resonance is described. The spec-
trometer would measure the cyclotron frequencies of ions
of the various masses, and the masses could then be calcu-
lated by the formula $m = eh/2\pi\nu$. A schematic diagram of
such a spectrometer is included. (B.J.H.)

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LAZUKIN, V.N.

Radio frequency technique for measuring the mass of relativistic
electrons. Zhur. eksp. i teor. fiz. 33 no.1:267-269 J1 '57.
(MLRA 10:9)

1. Moskovskiy gosudarstvennyy universitet.
(Electrons) (Relativity (Physics))

LAZUKIN, V. N.

AUTHOR: LAZUKIN, V. N. 56-7-42/66
TITLE: High Frequency Method for the Mass Determination of Relativistic
Electrons. (Radiochastotnyy metod izmereniya mass relyati-
vistskikh elektronov, Russian)
PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 33, Nr 7, pp 267-269
(U.S.S.R.)
ABSTRACT: Two apparatus, one with a cylindrical resonator, and the other,
built like an inverse cyclotron, are constructed and described
by means of a diagram. It is described in short what parameters
have to be measured in both cases in order to be able to measure
the electron masses up to $\beta \approx 1$. (With 2 Illustrations).
ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet)
PRESENTED BY:
SUBMITTED: 31.1.1957
AVAILABLE: Library of Congress

Card 1/1

LAZUKIN, V.N.

PA - 2054

AUTHOR:

Not given.

TITLE:

On the Definition: "Cyclotron Resonance"

PERIODICAL:

Uspekhi Fizicheskikh Nauk, 1957, Vol 61, Nr 1, pp 133-135
(U.S.S.R.)

ABSTRACT:

1.) JA.G.DORFMAN'S point of view:
The definition "cyclotron resonance" was introduced by V.N. LAZUKIN, Uspekhi Fizicheskikh Nauk, 59, 553 (1956). However, the English physicist DINGLE and the author called the effect which both of them predicted independently, "diamagnetic resonance" because it differs from all other magnetic resonance phenomena, being connected immediately and exclusively with diamagnetism. The American physicists KITTEL, KIPP and DRESSELHAUS then called this effect "cyclotron resonance" and subsequent works (mostly by the same authors or by their assistants) continued to use this expression. According to JA.G.DORFMAN's opinion the expression "cyclotron resonance" is not popular enough and there is no necessity of using it in Soviet literature. According to DORFMAN it is necessary to consider which of the two expressions "diamagnetic resonance" or "cyclotron resonance" is more justified from a scientific point of view. DORFMAN raises various objections against the expression "cyclotron resonance", e.g. a natural phenomenon should not be named after a phenomenon, i.e. the cyclotron, in a special device, which is similar to it.

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On the Definition "Cyclotron Resonance"

PA - 2054

Electromagnetic induction is not called "transformer induction" nor is the expression "thermometric expansion" used. The cyclotron might come out of use later, and then nobody could imagine what a "cyclotron" is. Finally, the word "cyclotron" is itself a badly chosen expression, whereas "diamagnetic resonance" will be understood by all physicists of all times.

2.) V.N.LAZUKIN'S point of view: V.N.LAZUKIN rejects DORFMAN'S criticism. According to LAZUKIN the expression "cyclotron resonance" found a wider propagation than the former expression "diamagnetic resonance", above all among physicists who occupy themselves with semiconductors and radiospectroscopy. The expression "cyclotron resonance" was also used in the official documents of the All-Union Conference on semiconductors. Apart from these formal reasons for the expression "cyclotron resonance" LAZUKIN also mentioned physical reasons. According to LAZUKIN, effects should be named after their discoverers, e.g. in the case discussed here they ought to be named DORFMAN-DINGLE-effect. Not given.

ASSOCIATION:
PRESENTED BY:
Submitted:

AVAILABLE:
Card 2/2

Library of Congress.

24(3)

SOV/56-36-3-5/71

AUTHOR:

Lazukin, V. N.

TITLE:

Some Peculiar Features of Multiplet Ferromagnetic Resonance in Ferrites (Nekotoryye osobennosti mul'tipletnogo ferromagnitnogo rezonansa v ferritakh)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 3, pp 682-689 (USSR)

ABSTRACT:

In the present paper the author describes the experimental results obtained by investigations of multiplet ferromagnetic resonance in inhomogeneous magnetized ferrite single crystal and polycrystalline ferrite samples. He operated with the frequencies of $\nu_1 = 9200$ megacycles and $\nu_2 = 14640$ megacycles, using ordinary videospectroscopes with resonators transmitting ν_1 but reflecting ν_2 , at room temperature. Several measurements were also carried out at the temperature of liquid nitrogen. The inhomogeneous magnetizations required for observation of the effect were mainly produced by the inhomogeneity of the demagnetizing fields of the investigated samples. The experimental arrangement, which had the form of a block scheme, is shown by figure 1. A number of diagrams shows the results

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Some Peculiar Features of Multiplet Ferromagnetic Resonance in Ferrites

obtained by investigations of 3 different positions of the sample. Figure 3 shows an absorption diagram for a polycrystalline MnZn ferrite spherule in the interval of from 2.8 to 4 kOe, (ν_1), figure 4 represents a similar diagram for a MnMg ferrite ring for $0 < H < 6$ kOe, (ν_1), and figure 5 shows the characteristic absorption diagrams of a MnMg-single crystal in 2 different positions with a group of sharply marked resonance peaks between 2 and 5 kOe. Figure 6 shows a photograph of a ferromagnetic resonance signal (oscillogram), taken on a single crystal in a 585 Oe field. Further investigations concern the angular dependence of weak resonance signals in MnMg-single crystals (Figs 7, 8). The author finally thanks A. I. Pil'shchikov for valuable discussions. There are 8 figures and 8 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 23, 1958

Card 2/2

SOV/56-36-4-1/70

21(7)
AUTHOR:

Lazukin, V. N.

TITLE:

Oscillations of a Plasma Beam in a Magnetic Field at Frequencies Close to Cyclotron Frequency (Kolebaniya plazmennogo puchka v magnitnom pole na chastotakh, blizkikh k tsiklotronnym)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 4, pp 969-975 (USSR)

ABSTRACT:

The present paper discusses experiments and their results, which were carried out for the purpose of investigating plasma oscillations in a longitudinal magnetic field. The apparatus used for this purpose and the observation method are discussed in detail in the first part of this paper (Figs 1,2). The device was, in principle, analogous to that used for the observation of magnetic nuclear resonance: The ions rotating in the magnetic field absorb high-frequency power; recording is carried out by way of quality variations of an autodyne-generator circuit. The method supplies an oscillation spectrum as a set of narrow lines with a very large signal-to-noise ratio. The ion source used was constructed by V. G. Tel'kovskiy and built under his supervision in one of the institutes of the Akademiya nauk SSSR (Academy of

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SOV/56-36-4-1/70

Oscillations of a Plasma Beam in a Magnetic Field at Frequencies Close to Cyclotron Frequency

Sciences, USSR) (Fig 2). The plasma column between the condenser plates (diameter 3-5 mm, length 20 cm) is investigated under the influence of a longitudinal magnetic field extending in the interior of a coil and oscillating with a frequency that is by a multiple lower than the corresponding ion cyclotron frequency (50 cycles). Much more intense narrow signals, so-called parasitic signals, which are due to plasma oscillations, occurred in the hydrogen plasma beside very broad signals of cyclotron resonance of atomic or molecular hydrogen ions. Figure 3 shows such signals in characteristic form ($p = 6 \cdot 10^{-4}$ torr, $H = 1276$ Oe, $U = 560$ v); figure 4 shows such parasitic signals as occur on the screen of a proton-fluxmeter. Figures 5 and 6 show the higher harmonics of such oscillations, and figure 7 shows a single harmonic ($\nu = 1.440$ megacycles, $5 \cdot 10^{-4}$ torr, 650 Oe, modulation ~ 150 Oe). The measured frequencies and relative intensities of 17 different lines are given by table 1; figure 8 shows the dependence of frequency on pressure, figure 9 shows the dependence of frequency on the potential on the source-cathode, and figure 10 the dependence of the frequency differences of two neighboring lines on magnetic field strength (Diagrams). The

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SOV/56-36-4-1/70

Oscillations of a Plasma Beam in a Magnetic Field at Frequencies Close to Cyclotron Frequency

plasma oscillations observed were found to have frequencies that deviate only little from the cyclotron frequency of ions. When discussing the experimental results the author pointed out that the observed plasma oscillations show certain parallels to the hydromagnetic waves known from theory. Table 2 gives an account of frequency, proportionality factor, number of harmonics, and ion type; herefrom it may be seen to what extent there is correlation among the frequencies of the occurring lines; thus, a superposition of the second harmonic of the H_3^+ -ion (0.121 megacycles) and the first harmonic of H_2^+ (0.242 megacycles) gives a line on the basic frequency of the H^+ -ion (0.363 megacycles). The author finally thanks V. G. Tel'kovskiy for his help and discussions, as well as the Mechanic N. A. Matsuyev and Radio-engineer N. I. Naumkin for their work. There are 10 figures, 2 tables, and 8 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)
Card 3/4

21.2300

69992

AUTHOR: Lazukin, V. N.

S/020/60/131/05/021/069
B013/3007

TITLE: The Determination of the g -Factor From a Comparison of the
Frequencies of the Paramagnetic and Cyclotron Resonances of the
Electrons η

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 5, pp 1064-1066 (USSR)

TEXT: As far as the author knows, hitherto no experiments have been made for the purpose of a direct observation of cyclotron resonance by detecting the microwave power output passing through the resonator. Such experiments, however, facilitate a very simple and clear observation of the cyclotron-resonance absorption line, and also an investigation of the dependence of its shape on various factors. The device constructed for this purpose makes it possible (apart from investigating the shape of the line of cyclotron resonance) to carry out a comparative investigation of the cyclotron resonance and the paramagnetic spin-resonance of the electrons under the same conditions. The main part of this device consists of a rectangular 3 cm resonator operating on a wave of the type H_{10} . This resonator is connected by means of two homogeneous waveguides with a generator of microwave oscillations and with a detector section. The beam passing through the resonator enters a Faraday beam catcher through an opening in

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69992

The Determination of the g-Factor From a Comparison of the Frequencies of the Paramagnetic and Cyclotron Resonances of the Electrons

S/020/60/131/05/021/069
B013/B007

a moving piston. The resonator and the electron gun are fitted to the axis of a solenoid generating a field of the desired strength. The observations made confirm the theoretical considerations concerning the shape and width of the cyclotron resonance absorption line as a function of the duration of the interaction of the electron with the radiation field, the density and energy of the electron beam, the collisions with the molecules of the residual gas, and the power of the microwave oscillations in the resonator. The frequencies ν_p and ν_c were compared for thermal electrons, which were obtained by the bombardment of a thin tantalum plate by electrons with energies of some hundreds of volts at a pressure of $\sim 10^{-6}$ torr in a hydrogen atmosphere. From these observations, it was then possible to calculate the g-factor $g = 2\nu_p/\nu_c$. This method was verified on anthracite. The intensity of electron-absorption is much greater than that of magnetic absorption due to paramagnetic resonance. As cyclotron resonance furnishes the most favorable lines for measurement with a power ranging from 1 to 2 microwatt, paramagnetic resonance becomes noticeable with a power that is at least 3 orders of magnitude above the noise level. Therefore, the following

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The Determination of the g-Factor From a Comparison of the Frequencies of the Paramagnetic and Cyclotron Resonances of the Electrons

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B013/B007

method was used: At a certain frequency ν_c and a minimum power applied to the resonator, the position of the line of cyclotron resonance was determined on the screen of the oscilloscope. Next, the beam was switched off, the power of the microwave oscillations increased, and the line of paramagnetic resonance was observed in the anthracite. The importance of measurement errors is pointed out. The above described method makes an easy investigation of the particular features of cyclotron resonance of free electrons possible. In this connection it is possible, by simple technical means, and in a simple manner, to determine sufficiently accurate values of important physical quantities. There are 2 figures and 3 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: December 12, 1959, by L. A. Artsimovich, Academician

SUBMITTED: December 6, 1959

Card 3/3

20115

9.4300
24.7900 (1158 and 1147)

5/18/61/003/002/013/050
B102/B204

AUTHOR: Lazukin. V. H.

TITLE: Splitting of paramagnetic resonance lines in
inhomogeneous fields

PERIODICAL: Fizika tverdogo tela, v. 3, no. 2, 1961, 408-410

TEXT: The electron - spin resonance (esr) may be observed in its usual form if both the constant and the microwave fields H_0 and H_1 respectively, are homogeneous; substances, whose esr show no fine structure, have a single symmetric absorption line. In ferromagnetics a disturbance of homogeneity leads to a distortion of the absorption-line: it becomes asymmetric and, under certain conditions, it is split into several lines of comparable intensities. This effect, which is known as multiplet ferromagnetic resonance, has already been repeatedly experimentally and theoretically investigated, above all, with respect to it being used in shf radio engineering. A qualitative explanation of the multiplet resonance in ferromagnetics is based upon the assumption that in the

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Splitting of paramagnetic ...

ferromagnetic a certain spin-wave spectrum exists. with the help of which the spatial distribution of magnetization in the crystal may be described. Further, inhomogeneous distribution of the phases of spin precession in the phase space must be assumed. For finite bodies, the spin-wave spectrum is discrete, forming a set of vibrational modes. All assumptions made for ferromagnetics and all conclusions drawn must also hold for paramagnetics; the difference with respect to the effect produced in ferromagnetics consists only in the smallness of the multiplet splitting of the resonance lines (which amounts to only some hundredth parts of oersteds at room temperature). The splitting of paramagnetic resonance lines is therefore only observable at very low temperatures, if magnetization is so considerable that splitting into lines becomes greater than the line width. In order to check whether observation of a weak splitting of the paramagnetic absorption signal in anthracite at room temperature and 15,000 Mc may be possible, the author, assisted by student G. V. Venkin, undertook experiments at room temperature, the results of which are shortly described. The experiments were carried out at 9,400 Mc, using a balanced radiospectro-scope and two types of absorbing cells in a short-circuited section of

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B102/B204

Splitting of paramagnetic ...

a square waveguide and a round resonator. By means of the cells of the first kind (parallel epipedes and anthracite cylinders with the cells of the second kind), thin annular anthracite disks were investigated with the following result: If \vec{H}_0 was highly homogeneous, and if \vec{H}_y had a gradient, no splitting could be observed, but the line symmetry was disturbed. If \vec{H}_0 and \vec{H}_y were inhomogeneous, splitting of the paramagnetic resonance line was observed. The number of splitting components and their mutual distance could be influenced by the size and the direction of the gradients of \vec{H}_0 . Splitting, with 1-3 oe, was 10^2-10^3 as great as might have been expected at room temperature. These preliminary results agree with the assumptions made in Ref. 4 (ZhETF, 30, 1160, 1958) concerning the strong exchange interactions causing a spin-wave spectrum in carbons. Similar phenomena were, however, observed also in polycrystalline diphenyl picrylhydrazyl. There are 2 figures and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc.

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S/181/61/003/002/013/050
B102/B204

Splitting of paramagnetic ...

ASSOCIATION: Moskovskiy gosudarstvennyy universitet, Nauchno-
issledovatel'skiy institut yadernoy fiziki (Moscow State
University, Scientific Research Institute of Nuclear
Physics)

SUBMITTED: April 23, 1960

Card 4/4

KRAVTSOV, N.V.; LAZUKIN, V.N.; SPALIN, N.V.

Microwave spectroscope with a high-frequency modulated magnetic field
for investigations in a wide range of temperatures. Vest. Mosk. un.
Ser. 3: Fiz., astron. 18 no. 6:18-22 N-D '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo
gosudarstvennogo universiteta.

L 10764-63 EPF(c)/EWT(1)/BDS/
EEG(b)-2--AFFTC/ASD/ESD-3--Pr-4--GG
ACCESSION NR: AP3003222

S/0020/63/150/006/1267/1269

AUTHOR: Kravtsov, N. V.; Lazukin, V. N.; Chekalin, N. V.

TITLE: Observation of spin induction in electron paramagnetic resonance

SOURCE: AN SSSR. Doklady, v. 250, no. 6, 1963, 1267-1269

TOPIC TAGS: electron paramagnetic resonance, spin induction method

ABSTRACT: The nuclear induction method developed by F. Bloch *et al.* [Phys. Rev., 69, 127, (1946)] for observation of nuclear magnetic resonance has been applied to observation of electron paramagnetic resonance. The method consists of placing the sample in a constant magnetic field perpendicular to a variable magnetic field and observing the variable component of the electron spin magnetic moment through an emf induced in the direction perpendicular to the two crossed fields. Experiments were conducted with a setup employing a klystron oscillating at 9500 Mc and feeding a hybrid ring through a ferrite valve and variable attenuator. Part of the power passes into a bimodal cylindrical cavity positioned in the field of a 50-cps electromagnet. Input and output waveguides are perpendicular to one another. The sample is placed at the

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ACCESSION NR: AP3003222

end of the cavity, where the microwave power is at a maximum, and the hybrid ring permits observation of the EPR signal by the usual method of reflection from the cavity. The system was tested with diphenylpicrylhydrazyl and yttrium ferrite single crystals. The results indicate high sensitivity of the device and high stability of the microwave circuit balance as particular advantages. It is suggested that observation of EPR by spin inductance can be accomplished in a radio spectroscopy with superheterodyne detection. The use of such a spectroscopy would obviate the necessity of using a hybrid ring or circulator, permit the use of high-power microwaves (which increases sensitivity), and provide very stable operation. Pulsed methods can also be used to observe electron spin induction and make relaxation time measurements. The article was presented by Academician L. A. Artsimovich, 29 January 1963. Orig. art. has: 3 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University)

SUBMITTED: 16Jan63

DATE ACQ: 24Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 002

Card

2/2

II 10745-63

Pr-4--GG/RM/WW

ACCESSION NR: AP3003509

ENP(j)/EPF(c)/EWT(1)/EWT(m)/BDS--AFFTC/ASD--Pc-4/

S/0020/63/151/001/0087/0089

AUTHOR: Kravtsov, N. V.; Lazukin, V. N.; Shanditsev, V. A.

TITLE: Many-quantum transitions in EPR γ

SOURCE: AN SSSR. Doklady, v. 151, no. 1, 1963, 87-89

TOPIC TAGS: EPR, electron paramagnetic resonance, diphenylpicrylhydrazyl free radical, EPR satellites

ABSTRACT: The effect of weak modulating radio frequency magnetic field H_2 on the EPR spectrum of the diphenylpicrylhydrazyl free radical was investigated. Absorption at microwave field frequency ω_1 and absorption and emission at ω_1 and ω_2 (frequency of H_2) were recorded in the experiments. As the amplitude of H_2 was increased, an increase was observed in the number of satellite lines located symmetrically on both sides of the principal line. It was determined that the line intensity decreased with increasing order number of the satellite. The first satellite corresponds to absorption of quantum $\hbar\omega_1$ and emission of quantum $\hbar\omega_2$. The next satellite (in a weaker field) is due to absorption of quantum $\hbar\omega_1$ and emission of quantum $\hbar\omega_2$. An analogous effect occurs on the

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other side of the principal line. The authors note that this effect makes it possible to measure high-frequency radiation by recording lower-frequency radiation. The emission at ω_2 and at multiples of ω_2 can also be utilized in designing quantum mechanical amplifiers. The article was presented by Academician L. A. Artsimovich, 29 Jan 1963. Orig art. has: 4 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: 16Jan63

DATE ACQ: 30Jul63

ENCL: 00

SUB CODE: PH

NO REF SOV: 002

OTHER: 006

[Signature]
Card 2/2

L 8463-65 EWT(1)/EWT(m)/EEC(t)/EWP(q)/EWP(b) IJP(c)/SSD/ASD(a)-5/AS(mp)-2/
AFWL/AFETR/RAEM(i)/RAEM(c)/ESD(gs)/ESD(t)/RAEM(t) JD/GG
ACCESSION NR: AP4048377 S/0053/64/083/003/0433/0502

AUTHOR: Bogomolova, L. D.; Lazukin, V. N.; Chepeleva, I. V.

TITLE: Electron paramagnetic resonance in silicon and germanium B

SOURCE: Uspekhi fizicheskikh nauk, v. 83, no. 3, 1964, 433-502

TOPIC TAGS: electron paramagnetic resonance, paramagnetic resonance, silicon, germanium, semiconductor

Abstract: In this survey there is a discussion of works on the electron paramagnetic resonance of impurities which form shallow and deep levels in silicon and germanium and also the electron paramagnetic resonance of radiation flaws which arise as a result of the irradiation of crystals. A survey is given of works published before 1963. There is no discussion of the technology and potentialities of electron paramagnetic resonance of minority donors in silicon and of the Kohn and Luttinger theory. Some of the special problems are taken up which are connected with methods of studying the electron paramagnetic resonance of semiconductors.

ASSOCIATION: none

Card 1/2

L 8463-65

ACCESSION NR: AF4048377

SUBMITTED: 00

ENCL: 00

SUB CODE: NP, IC

NO REF SOV: 001

OTHER: 099

JPRS

Card 2/2

L 18248-65 EWT(1)/EWT(m)/EWP(e)/EEC(t)/EWP(b) Pq-4/Pe5 IJP(c)/RAEM(a)/
AS(mp)-2/AFWL/RAEM(c)/ASD(a)-5/SSD/RAEM(1)/ESD(gs)/F3D(t) WH
ACCESSION NR: AP5000659 S/O 31/64/006/012/3617/3619

AUTHORS: Bogomolova, L. D.; Lazukin, V. N.; Chepeleva, I. V. B 15

TITLE: Electron paramagnetic resonance of Mn^{2+} in Chalcogen glasses 21

SOURCE: Fizika tverdogo tela, v. 6, no. 12, 1964, 3617-3619

TOPIC TAGS: chalcogen, glass, electron paramagnetic resonance,
line width, antiferromagnetism, absorption line, transition metal,
temperature dependence

ABSTRACT: In view of the lack of published data on the EPR in chalcogen glasses, the authors investigated by the EPR method several systems containing transition metals, and systems in which the transition metals were specially introduced. The only systems for which EPR could be observed so far were those with Mn^{2+} , Fe^{3+} , and Gd ions, and the present paper is devoted to some results on the EPR of Mn^{2+} in glass-like compounds and crystallized glasses of the

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L 18248-65

ACCESSION NR: AP5000659

As₂Se₃-As₂Te₃ system, in which the Mn was specially introduced, and also the system MnSe-As₂Se₃-As₂Te₃. The investigated glasses were synthesized in evacuated quartz ampoules at 850K, at which temperature they were kept in the molten state for two hours, after which they were cooled with the furnace turned off. The EPR absorption measurements were made with a video-radiospectroscope in the 3.2 cm band at temperatures from 77 to 293K. The EPR absorption lines in all the investigated substances broadened with decreasing temperature, and in the crystallized glasses they disappeared at a certain temperature that depended on the composition of the sample. This behavior indicates that these substances go over into an antiferromagnetic state. The line broadening and the decrease in the line intensity with decreasing temperature in such compounds indicates that they contain crystalline intrusions of antiferromagnetic complexes MnSe and MnTe. Orig. art. has: 4 figures.

Card 2/3

L 18248-65

ACCESSION NR: AP5000659

ASSOCIATION: None

SUBMITTED: 14Apr64

ENCL: 00

SUB CODE: SS

NR REF SOV: 003

OTHER: 003

Card 3/3

L 11780-66(N) EWT(1)/EWT(m)/EWP(c)/EWP(t)/EWP(b) IJP(c) JD/WW/GG/WH

ACC NR: AP5003253

SOURCE CODE: UR/0020/65/165/006/1336/1339

AUTHOR: Bogomolova, L. D.; Lazukin, V. N.; Chepeleva, I. V.; Bal'skaya, L. A.

ORG: Moscow State University im. M.V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Electron paramagnetic resonance of manganese ions in the As-Se-Ge glass system

SOURCE: AN SSSR. Doklady, v. 165, no. 6, 1965, 1336-1339

TOPIC TAGS: EPR spectrum, manganese ion, nonsilica glass, arsenic selenium germanium glass, glass structural property

ABSTRACT: EPR spectra of Mn^{2+} in the glasses of the As-Se-Ge system containing 12.5-40 at% Ge have been studied in the 293-77K range to determine the type of chemical bonding of Mn and Ge atoms in relation to heat treatment and crystallization of the glasses. Glass samples were synthesized from high-purity materials by melting and slow cooling in evacuated quartz ampuls. All samples contained 1 at% Mn. The resonance absorption lines with g-factors of 2 and . about 4 were observed in the EPR spectra of all samples. The lines with g-factor of 2, which broadened greatly with a decrease in temperature, were attributed to antiferromagnetic, small-size inclusions of MnSe crystals. The "residual" line with a g-factor of 2 in the EPR spectra at 77K, especially

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UDC: 541.67-161.6:538.113

L. 11780-66

ACC NR: AP6003253

strong in the sample with 40 at% Ge, was correlated with Mn in the glass skeleton. The EPR lines with g-factor of 4, which become more intense with an increase in Ge concentration, were associated with an increase in concentration of $[\text{GeSe}_4/2]$ and $[\text{GeGe}_4/4]$ tetrahedral nodes in the glass structure. The presence of Mn may contribute to the increase in the tetrahedral nodes content by a mechanism analogous to that theoretically established for Fe^{3+} in silicate glasses. The EPR line with g-factor of about 4.3 was observed earlier by Soviet and Western scientists in the Fe^{3+} containing silicate glasses. Mn in the glass lattice may be bound to As by a semipolar bond and to Se by a covalent bond. The EPR line with g-factor of 10 was observed in only one glass sample at 77K and was attributed to heat treatment. Orig. art has: 2 figures and 2 tables. [JK]

SUB CODE: 07/ SUBM DATE: 12May65/ ORIG REF: 004/ OTH REF: 001/ ATD PRESS: 4/78

HW
Card 2/2

L 33017-66

ACC NR: AP6015082

SOURCE CODE: UR/0020/66/168/001/0059/0062

UTHOR: Bogomolova, L. D.; Lazukin, V. N.; Chepeleva, I. V.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Electron paramagnetic resonance of positive bivalent manganese ions in $Tl_2SeAs_2Se_3$

SOURCE: AN SSSR. Doklady, v. 168, no. 1, 1966, 59-62

TOPIC TAGS: paramagnetic ion, manganese, selenide, thallium compound, electron paramagnetic resonance, arsenic compound, microwave spectroscopy, antiferromagnetism

ABSTRACT: The authors study electron paramagnetic resonance in vitreous $Tl_2SeAs_2Se_3$ with manganese impurities in quantities of 0.1-1 wt.%. A standard RE-1301 microwave spectrometer was used for taking the EPR spectra at temperatures of 300 and 77°K. A superheterodyne spectroscope was used for measurements in the 3 cm range at 4.2°K. All specimens except one (with 0.7 wt.% Mn) showed two resonance lines with g -factors of 4 and 2. The single exception showed no EPR line with $g=4$, having only a single line with $g=2$. Some asymmetry is observed in the line with $g=4$ even when the edges of the two lines overlap. When the temperature was reduced to 77°K, an increase in line intensity was observed by a factor of 4-6 for the line with $g=4$, and by a factor of

UDC: 541.67-161.6:538.113

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L 33017-66

ACC NR: AP6015082

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1.5-2.3 for the line with $g \approx 2$. A model is proposed for the paramagnetic center responsible for the EPR line with a g -factor of ≈ 4 , due to manganese ions in the specimens. The bivalent manganese ion is positively charged and located in a strong electric field of 4 charges: two Se^{2-} ions and two Tl^+ ions. Although the line with $g \approx 2$ did not disappear at 77°K, the increase in line width with reduction in temperature at high Mn concentrations may indicate the formation of antiferromagnetic complexes with a Neel point below 77°K. Otherwise the line with $g \approx 2$ may be assumed to be the superposition of two lines: one due to Mn in the antiferromagnetic complexes, which is broadened and decreases in intensity when the temperature is lowered to 77°K, and a second line due to other paramagnetic centers with an intensity which may increase during cooling. A comparison of the EPR spectra for all specimens showed that the number of centers contributing to the line with $g \approx 2$ increases more rapidly with manganese concentration than the number of centers responsible for the line with $g \approx 4$. The authors thank D. T. Kolomyts and V. P. Shilo for furnishing the specimens used in the experiment and for helpful consultation. Orig. art. has: 2 figures, 1 table.

SUB CODE: 20/ SUBM DATE: 14Jul65/ ORIG REF: 004/ OTH REF: 002

Card 2/2

L 37148-66 EWP(●)/EWT(m)/EWP(t)/ETI LJP(c) JD/WH

ACC NR: AP6018055

SOURCE CODE: UR/0020/66/168/003/0560/0563

AUTHOR: Bogomolova, L. D.; Lazukin, V. N.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Influence of heat treatment on the electron paramagnetic resonance spectrum in certain chalcogenide glasses

SOURCE: AN SSSR. Doklady, v. 168, no. 3, 1966. 560-563

TOPIC TAGS: glass property, electron paramagnetic resonance, epr spectrum, paramagnetic ion, line width, *THERMAL EFFECT*

ABSTRACT: This is a continuation of earlier work (Dokl. v. 165, no. 6, 1965) where it was reported that an additional broad asymmetrical line with $g \sim 10$ was observed at 77K in $\text{AsSe}_{1.52}\text{Ge}_{0.93}$ glass with 1 at.% Mn. In view of the difficulty of interpreting this additional line, the authors have investigated the influence of heat treatment of As-Se-Ge glasses with large germanium contents, on the epr spectra of manganese specially introduced into these compounds. The epr of manganese was investigated with a standard radio spectrometer (RE-1301) at room and liquid-nitrogen temperatures. Most tests were made on glass having a composition (in at.%) $\text{As}_{28}\text{Se}_{44}\text{Ge}_{27}$, and Mn1. At room temperature all samples had an epr spectrum consisting of two lines, one intense one with $g = 2.0$ and one weak with $g \approx 4.3$. At 77K the intensity of the line with $g = 2.0$ decreased and its width increased, while the intensity of the line with

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UDC: 541.67 + 161.6: 538.113

L 37148-66

ACC NR: AP6018055

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$g \approx 4.3$ increased and its width remained practically the same. New lines appeared in weak magnetic fields. Various changes of the spectrum due to changes in the composition and conditions for the synthesis of the sample are described. A feature common to some of the samples was the dependence of the spectrum on the magnetic field orientation. The additional absorption lines in weak magnetic fields are briefly discussed. The dependence on the orientation of the magnetic field is attributed to crystalline intrusions on certain planes. Certain ambiguities in the interpretation of the spectrum are pointed out. The authors thank L. A. Bal'skaya for synthesizing the investigated materials. This report was presented by Academician L. A. Artsimovich 13 September 1965. Orig. art. has: 2 figures, 3 formulas, and 1 table.

SUB CODE: 11, 20/ SUBM DATE: 14 Jul 65/ ORIG REF: 003/ OTH REF: 004

Card 2/2 of

ACC NR: 55053268

SOURCE CODE: UR/0020/56/170/004/0819/0321

AUTHOR: Chepeleva, I. V.; Lazukin, V. N.; Dembovskiy, S. A.

ORG: Moscow State University Im. N. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Electron paramagnetic resonance of Gd^{3+} ions in chalcogenide glass $Tl_2SeAs_2Se_3$

SOURCE: AN SSSR. Doklady, v. 170, no. 4, 1966, 819-821

TOPIC TAGS: electron paramagnetic resonance, gadolinium, glass property, epr spectra, temperature dependence

ABSTRACT: The gadolinium admixture to the glass was 0.2 - 0.5 wt.%. The synthesis of the glass was described elsewhere (ZhTF v. 28, 5, 981, 1958). The temperature was raised at 150 deg/hr with soaking for an hour at 600 and 900C. The cooling was either in the disconnected oven, or by quenching in cold water. The epr spectra were recorded with a standard spectrometer (RE-1301) at room and nitrogen temperatures. When the Gd content was 0.5% and the temperature was 4.2K, the epr was observed with a superheterodyna 3-cm spectrometer. The observed spectra were quite complicated and comprised superpositions of lines of different widths and intensities. The intensity of the spectrum increased approximately four times on going from room temperature to nitrogen temperature. The intensities of the spectrum also increased with increasing gadolinium concentration. The method of cooling had no effect. Neither did the method of synthesis. Most of the properties of the observed spectral lines are thus

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UDC: 541.67 + 161.6: 538.113

ACC NR: AF6033268

connected with the presence of a strong crystalline field. The authors thank D. I. Volkov for a discussion of certain problems, V. P. Shilo for synthesizing some samples, and N. Ye. Kask for epr observations at 4.2K and I. I. Kozhina for the x-ray phase analysis. This report was presented by Academician L. A. Artsimovich 8 January 1966. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 30Dec65/ ORIG REF: 004/ OTH REF: 002

Card 2/2

SHINKINA, L.I. (Moskva) ZAYTSEVA, V.P. (Moskva) LAZUKINA, V. F. (Moskva-Ivanovo)
UZOV, B.A. (Moskva-Ivanovo)

New method of using zippers in tailoring trousers. Shvein.prom.
no.1:9-13 Jan '61. (MIRA 14:3)
(Zippers)

LAZUKO, N.N.

Changes in the electrical activity of the brain in dogs under the
influence of stimulation of colon receptors. Biul.eksp.biol. i med.
no.1 supplement:123-126 '57. (MIRA 10:3)

SELIVANOVA, A.T.; LAZUKO, N.N.

Effect of some cholinolytic substances following their direct introduction into the brain on conditioned reflex activity in cats. Farm. 1 toks. 26 no.1:3-7 Ja-F '63. (MIRA 17:7)

1. Fiziologicheskiiy otdel imeni I.P. Pavlova (zav. - deystvitel'nyy chlen AMN SSSR prof. P.S. Kupalov) Instituta eksperimental'noy meditsiny AMN SSSR.

LAZUKO, N.N.

Correlation of excitation and inhibition processes in the auditory
analysor of the dog under the influence of pure tones. Zhur. vys.
nerv. delat. 14 no.2:290-300 Mr-Apr '64. (MIRA 17:6)

1. Pavlov Physiology Department, Institute of Experimental Medicine,
U.S.S.R. Academy of Medical Sciences, Leningrad.

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4, 15-57-4-4305
p 38 (USSR)

AUTHOR: Lazukov, G. I.

TITLE: Geological and Geomorphological Description of the
Kostenkova-Borshchevka Region and Natural Conditions of
the Period of Upper Paleolithic Man. (Geologo-geomorfo-
logicheskaya kharakteristika Kostenkovsko-Borshchevskogo
rayona i prirodnyye usloviya vremeni obitaniya verkh-
nepaleoliticheskogo cheloveka)

PERIODICAL: Materialy po paleogeografii, 1954, Vol 1, pp 89-148

ABSTRACT: Bibliographic entry

Card 1/1

LAZUKOV, G.I.

Development of the hydrographic network in the northwestern part of the West Siberian Lowland. Vest. Mosk. un. Ser. biol., geol., geog. 14 no.3:3-12 '59. (MIRA 13:6)

1. Kafedra obshchego zemlevedeniya Moskovskogo universiteta. (Siberia, Western--Paleogeography)

BYKOV, V.D., red.; KOSOV, B.F., red.; LAZUKOV, G.I., red.; MARKOV, K.K., red.; RYABCHIKOV, A.M., red.; SAUSHKIN, Yu.G., red.; YANIKOV, G.V., red.; CHERNYKH, M.P., mladshiy red.; MAL'CHEVSKIY, G.N., red.kart; VILENSKAYA, E.N., tekhn.red.

[Methodology of geographical studies] Metody geograficheskikh issledovaniy; sbornik statei. Moskva, Gos.izd-vo geogr.lit-ry, 1960. 388 p. (MIRA 13:12)

1. Moscow. Universitet. 2. Kafedra gidrologii sushi Moskovskogo gosudarstvennogo universiteta (for Bykov). 3. Kafedra geomorfologii Moskovskogo gosudarstvennogo universiteta (for Kosov). 4. Kafedra obshchego zemledeliya Moskovskogo gosudarstvennogo universiteta (for Lazukov, Markov). 5. Kafedra fizicheskoy geografii zarubezhnykh stran Moskovskogo gosudarstvennogo universiteta (for Ryabchikov). (Geography--Study and teaching)

KAZUKOV, G.I.

Quaternary sediments in the northwestern part of the West
Siberian Plain. Trudy VNIGRI no.158:92-116 '60. (MIRA 14:3)
(West Siberian Plain--Geology)

GALERKINA, S.G.; LAZUKOV, G.I.

Using drilling data for studying Quaternary sediments in the area
between the Ob' station and the Sarroto village. Trudy VNIGRI no.158:
117-125 '60. (MIRA 14:3)

(Ob' Valley—Geology, Stratigraphic)

LAZUKOV, G.I.

Age of the Salemal (Sanchugovka) sediments. Izv. vys. ucheb. zav.;
geol. i razv. 3 no.12:29-36 D '60. (MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova.
(Siberia, Western--Geology, Stratigraphic)

LAZUKOV, G.I.; KHLEBNIKOV, V.K.

Horizon of Taz moraines in the Ob' Valley. Geol. i geofiz. no.4:
74-87 '61. (MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet i Zapadno-Sibirskaya
ekspeditsiya Vsesoyuznogo nauchno-issledovatel'skogo geologicheskogo
instituta, Leningrad.

(Ob' Valley-Moraines)

MARKOV, K.K.; LAZUKOV, G.I.; GRICHUK, M.P.

Principal characteristics of the development of nature in the
U.S.S.R. during the Quaternary (Glacial Epoch). Izv. AN SSSR.
Ser. geog. no. 4:10-13 JJ-Ag '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Physical geography) (Glacial Epoch)

OPOCHINSKAYA, Ye.A. Prinimaina uchastiye ZHUKOVSKAYA, K.V.;
LAZUKOV, G.I. red.

[Basic characteristics of the development of nature on
the territory of the U.S.S.R. in the Quaternary (glacial
epoch)] Osnovnye zakonomernosti razvitiia prirody ter-
ritorii SSSR v chetvertichnom periode (lednikovom pe-
riode-antropogene) Pod red.G.I.Lazukova. Moskva, Mosk.
gos.univ. im. M.V Lomonosova. Pril. [Bibliography, 1940-
1960] Bibliografiia, 1940-1960 sg. No.1. 1962. 251 p.
(MIRA 16:11)

(Bibliography - Glacial epoch)

LAZUKOV, G.I.; NAZAREVICH, B.P.

Sediments of the Lower Quarternary glaciation in the lower
Ob' Basin. Vest.Mosk.un.Ser.4: Geol. 17 no.2:60-66 Mr-Apr '62.
(MIRA 15:5)

1. Kafedra obshchego zemlovedeniya i kafedra geologii i
geokhimii goryuchikh iskopayemykh Moskovskogo universiteta.
(Ob' Valley---Glacial epoch)

CHOGHIA, N.G.; GALERKINA, S.G.; DROZNE, M.A.; ZAKHAROV, Yu.F.; KROKHIN,
I.P.; M'ZIN, I.L.; LAZUKOV, G.I.

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(MIRA 15:3)

(Ural Mountains--Geology)

~~LAZUKOV, G. I.~~

Ancient submerged valleys in the northern part of Western
Siberia. Vest. Mosk. un. Ser. 5: Geog. 17 no. 5: 18-23 S-0 '62.
(MIRA 15:10)

1. Kafedra obshchego zemlevedeniya Moskovskogo universiteta.

(Siberia, Western—Submerged lands)

REYNIN, I.V.; LAZUKOV, G.I.; LEVKOVSKAYA, G.M.

Result of studying Quaternary sediments in the north of the West
Siberian oil- and gas-bearing province. Trudy VNIGRI no.225:102-
120 '63. (MIRA 17:3)

GALERKINA, S.G.; VERENINOVA, T.A.; CHIRVA, S.A.; KROKHIN, I.P.; REYNIN, I.V.;
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Results of studying facies and the Mesozoic and Cenozoic paleogeography for forecasting oil- and gas-bearing formations in north-western Siberia. Trudy VNIGRI no.225:121-166 '63. (MIRA 17:3)

YEVTEYEV, S.A.; LAZUKOV, G.I.;

Role of glacial isostasy in the crustal movements of the regions
of recent and ancient glaciation. Izv. AN SSSR.Ser. geog. no.
2:24-? Mr-Ap '64. (MIRA 17:5)

1. Institut geografii AN SSSR i Moskovskiy gosudarstvennyy
universitet im. M.V.Lomonosova.

LAZUKOV, G.I.

Level variations of the Polar Basin in the Quaternary. Okeanologia
4 no.1:174-181 '64. (MIRA 17:4)

LAZUKOV, G.I.

The tectonic regime in the northwestern part of the West Siberian Plain during the accumulation period of the deposits of the Yamal series. Vest. Mosk. un. Ser. 5: Geog. 19 no.2:87-89 Mr-Ap '64.
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LAZUKOV, G.I.

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glaciation areas. Dokl. AN SSSR 155 no. 2:337-339 Mr '64.
(MIRA 17:5)

1. Institut geografii AN SSSR. Predstavleno akademikom A. A.
Grigor'yevym.

MARKOV, Konstantin Konstantinovich; LAZUKOV, Grigoriy Ivanovich;
NIKOLAYEV, Vladimir Aleksandrovich; KISLOV, V.L., red.

[Quaternary period; glacial period-quaternary period]
Chetvertichnyi period; lednikovyi period - antropogenovyi
period. Moskva, Izd-vo Mosk. univ. Vol.1. 1965. 371 p.
(MIRA 18:7)

LAZUKOV, G.I., red.; MEKLYUDOVA, M.P., red.

[Quaternary paleogeography; for the 7th Congress of the International Association on Quaternary Research (INQUA) held in the U.S.A., 1965] Paleogeografiia chetvertichnogo perioda; k VII Mezhdunarodnomu kongressu Assotsiatsii po izucheniiu chetvertichnogo perioda (INKVA), SShA, 1965. Moskva, Izd-vo Mosk. univ., 1965. 136 p. (MJRA 18:8)

MARKOV, Konstantin Konstantinovich; LAZUKOV, Grigoriy Ivanovich;
NIKOLAYEV, Vladimir Aleksandrovič; KISLOV, V.L., red.

[Quaternary period; Glacial epoch - Quaternary period]
Chetvertichnyi period; lednikovyi period - antropogenovyi
period. Moskva, Izd-vo Mosk. univ. Vol.2. 1965. 434 p.
(MIRA 18:10)

SUKACHEV, V.N.; BOGDANOV, A.A.; IVANOVA, I.K.; LAZUKOV, G.I.; NIKOLAYEV, N.I.;
YAKUSHOVA, A.F.; GELLER, S.Yu.; GRICHUK, V.P.; KOLESNIK, S.V.;
SOKOLOV, N.N.; LICHKOV, B.L.; GORETSKIY, G.I.; SHCHUKIN, I.S.;
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TUSHINSKIY, G.K.

Konstantin Konstantinovich Markov's role in the creation and development of the paleogeography of the anthropogenic (the Quaternary) period; on his 60th birthday and the 40th anniversary of scientific work. Izv. Vses. geog. ob-va 97 no.4:377-379 J1-Ag '65.

(MIRA 18:8)

LAZUKOV, M.I.

Effect of weather, methods of castration of flower buds, and the time of pollination on the quality of ovaries, fruits, and seeds of the apple and pear. Agrobiologiya no.6:914-916 N-D '61.
(MIRA 15:2)

1. Moskovskaya sel'skokhozyaystvennaya akademiya imeni K.A. Timiryazeva.

(Apple breeding)

(Pear breeding)

LAZUKOV, N. A.

PA-26T94

USSR/Physics

Electrons - Emission

Cathodes, Oxide

Dec 1946

"Secondary Electron Emission of Semiconductors as a Function of the Angle of Incidence of the Initial Beam," Yu. M. Kushnir, Sh. M. Rakhimov, N. A. Lazukov. 6 pp

"Zhur Tekh Fiz" Vol XVI, No 10

A spherical condenser type tube was used to study the dependence of the secondary emission of NiO, ZnO, and Ag O upon the angle of incidence of first beam. At the same time the authors studied the distribution function of the secondary electrons of energies. It was shown that with respect to the secondary electron emission function there is no difference between metals or semiconductors. Submitted at the Moscow State Pedagogical Institute imeni Libknekht, Research and Investigation Physics Laboratory.

PA-26T94

AUTHORS: Lazukov, N. A., Chelnokov, I. Ye.,
Ivanov, V. P.

SOV/69-5-1-4/28

TITLE: Investigation at the Stand of the Experimental Nuclear Reactor
VVR-S (Issledovaniye na stande eksperimental'nogo yadernogo
reaktora VVR-S)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 1, pp. 44-51 (USSR)

ABSTRACT: The present investigations of the VVR-S reactor were carried out for the purpose of ascertaining the neutron-physical parameters which are of importance in connection with the starting and operation of the reactor. The experiments were carried out at zero power and permit the following conclusions to be drawn: The following are the parameters of the core of the reactor for starting and operation:
a) The critical mass is attained by means of 25 fuel elements (3.2 kg U^{235}). With a charge of 32 fuel caskets (4.1 kg U^{235}) the excess reactivity Δk in the reactor at the beginning of operation amounts to ~ 0.05 . This is sufficient for xenon compensation, for the temperature effect, and for the modification of reactivity which depends on the change of the quality of the

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reflector during experiments. The maximum initial charge at which excess reactivity is fully compensated by the bringing in of all regulating rods is that of 38 fuel caskets (4,9 kg U^{235}).

b) The compensating property Δk of all regulating rods is about 0,07 and that of the safety rods is 0,06. The safety rods respond within about 0,3 sec.

c) The temperature coefficient of the reactivity of the reactor is negative, and within the temperature range of 30-40° C it amounts to $\frac{\Delta k}{\Delta t} \approx -1 \cdot 10^{-4}/^{\circ}C$.

d) The "displacers" (vytesnitel') located on the periphery of the core (20 of them) reduce reactivity by about 0,01. The reduction of reactivity, if in the "displacers" (vytesnitel') materials are subjected to irradiation (production of radioactive isotopes), may attain a value of 0,01 and more.

e) From a power output of 0,3 kW onward, the automatic control device of the reactor operates reliably. Automatization can be attained also already from 5 W onwards providing that ionization

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chambers are used in the core as checking devices. There are
8 figures, 2 tables, and 3 references, 2 of which are Soviet.

SUBMITTED: February 13, 1958

1. Reactors--Analysis 2. Reactors--Starting 3. Reactors
--Operation

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LAZUKOV, H. A.; GAVANINSKIY, Yu. V.; GARANIN, S. I.; SHISHKIN, G. V.

"Uranium-water critical assemblies."

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Laboratory method for determining the stiffness of wool fibers. Test.
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